CS 61B Data Structures, Spring 2019

Instructor: Josh Hug
Lecture: MWF 3-4 PM, Wheeler 150

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Announcements [View All]

- We will be hosting "Addressing Microaggressions with Productive Interventions" with Christopher Hunn on **Sunday (5/5) from 5-7pm in the Wozniak lounge (Soda 430).**
- See @6168 for more details and to indicate interest!

Mock Final 5/7 7-10pm

- We will be hosting a mock final (Spring 16) on **Tuesday (5/7) from 7-10pm in Dwinelle 155** (and overflow VLSB 2040). Please arrive promptly at 6:50pm.
- See @5721 for more details!

RRR Week Review session during lecture time 5/6, 5/8

- See https://tinyurl.com/61bRRRpoll to indicate topical interest

Calendar

Week	Date	Reading	Lecture	Discussion	Lab	Assignments/Exams
1 survey	Wed 01/23	1.1	1. Intro, Hello World Java [vid1] [vid2] [slides] [guide]	Intro to Java [solution]	Setting Up Your Computer --- javac, java, git (due 2/1)	HW 0: Basic Java Programs (optional)
	Fri 01/25	1.2	2. Defining and Using Classes [video] [slides] [guide]			
2 survey	Mon 01/28	2.1	3. References, Recursion, and Lists [video] [slides] [guide]	Scope, Pass-by-Value, Static [slides] [solution] --- Scope, Pass-by-Value, Static	IntelliJ Home Setup --- IDEs (due 2/1)	Project 0: NBody (due 2/1 @ 11:59PM)

Week	Date	Reading	Lecture	Discussion	Lab	Assignments/Exams	
				Linked Lists [solution]			
	Wed 01/30	2.2	4. SLLists, Nested Classes, Sentinel Nodes [video] [slides] [guide]				
	Fri 02/01	2.3, 2.4	5. DLLists, Arrays [video] [slides] [guide]				
3 survey	Mon 02/04	2.5	6. ALists, Resizing, vs. SLists [video] [slides] [guide]	Linked Lists, Arrays [slides] [solution]	Testing, Debugging (due 2/8)	Project 1A: Data Structures (due 2/9 @ 11:59 PM)	
	Wed 02/06	3.1, Optional: TDD is dead, Unit Tests Are Waste, Response	7. Testing [video] [slides] [guide]	Linked Lists, Arrays Exam Prep [solution]			
	Fri 02/08	4.1	8. Inheritance, Implements [video] [slides] [guide]				
4 survey	Mon 02/11	4.2	9. Extends, Casting, Higher Order Functions [video] [slides] [guide]	Inheritance [slides] [solution]	Peer Code Review (due 2/15)	Project 1B: Testing and HoFs (due 2/16 @ 11:59 PM)	Project 1 Gold: Autograding (due 2/16 @ 11:59 PM)
	Wed 02/13	4.3	10. Subtype Polymorphism vs. HoFs [video] [slides] [guide]	Inheritance Exam Prep [solution]			
	Fri 02/15	6.1, 6.2, 6.3, 6.4	11. Exceptions, Iterators, Object Methods [video] [slides] [guide]				
5 survey	Mon 2/18: Academic Holiday			Iterators, Iterables	HugLife (due 2/22)		

Week	Date	Reading	Lecture	Discussion	Lab	Assignments/Exams
	Wed 02/20	None	12. Coding in the Real World, Review [slides]	[slides] [solution]		Midterm 1 (Date 2/20, 8-10PM) Material up to 2/15
	Fri 02/22	8.1, 8.2, Algs 170-198 (top paragraph)	13. Asymptotics I [video] [slides] [guide]	Exceptions, Iterators, Iterables Exam Prep [solution]		
6 survey	Mon 02/25	9.1, 9.2, 9.3, 9.4, 9.5, Algs 216-233	14. Disjoint Sets [video] [slides] [guide]	Disjoint Sets and Asymptotics [slides] [solution]	Disjoint Sets (due 3/1)	HW 1: Java Syntax and Sound Synthesis (due 2/27)
	Wed 02/27	8.3, 8.4 (extra), Algs 170-198	15. Asymptotics II [video] [slides] [guide]	Disjoint Sets and Asymptotics Exam Prep [solution]	Challenge Disjoint Sets (due 3/1)	
	Fri 03/01	10.1, 10.2, Algs 396-406	16. ADTs, Sets, Maps, BSTs [video] [slides] [guide]			HW2: Percolation (due 3/6)
7 survey	Mon 03/04	11.1, 11.2, 11.3, Algs 424-431, 432-448 (extra)	17. B-Trees (2-3, 2-3-4 Trees) [video] [slides] [guide]	More Asymptotics, Search Trees [slides] [solution]	TreeMap (due 3/8)	
	Wed 03/06	11.4, 11.5, Algs 424-431, 432-448 (extra)	18. Red Black Trees [video] [slides] [guide]	More Asymptotics, Search Trees Exam Prep [solution]	Challenge Binary Search Tree Performance (due 3/8)	
	Fri 03/08	12.1, 12.2, 12.3, 12.4, 12.5, Algs 458-468, 478-479, 468-475 (extra)	19. Hashing [video] [slides] [guide]			HW3: Hashing (due 3/11)
8 survey	Mon 03/11	13.1, 13.2, 13.3, Algs 308-320	20. Heaps and PQs [video] [slides] [guide]	LLRBs, Hashing, Heaps [slides] [solution]	HashMap (due 3/15)	
					Challenge Heaps and	

Week	Date	Reading	Lecture	Discussion	Lab	Assignments/Exams
	Wed 03/13	14.1, 15.1, 15.2, 15.3, Algs 730-752	21. Prefix Operations and Tries [video] [slides] [guide]	[redacted] Hashing, Heaps Exam Prep [solution]	Hashes (due 3/15)	
	Fri 03/15	16.1, 16.2, 16.3	22. Range Searching and Multi-Dimensional Data [video] [slides] [guide]			
9 survey	Mon 03/18	17.1, 17.2, 17.3, 17.4, Algs 538-542, 566-583	23. Tree and Graph Traversals [video] [slides] [guide]	Tries, K-d Trees, Tree Traversals [slides] [solution]	Tries (due 3/22)	Proj2: HeapPQ/KD-Tree HeapPQ (due 3/16) KDTree due (3/23)
	Wed 03/20	18.1, 18.2, Algs 538-542, 566-583	24. Graph Traversals and Implementations [video] [slides] [guide]	Tries, K-d Trees, Tree Traversals Exam Prep [solution]	Challenge Graphs (due 3/22)	
	Fri 03/22	19.1, 19.2, 19.3, Algs 638-657	25. Shortest Paths [video] [slides] [guide]			
Spring Break (3/25 - 3/29)						
10 survey	Mon 04/01	20.1, 20.2, Algs 604-630	26. Minimum Spanning Trees [video] [slides] [guide]	DFS, BFS, Shortest Paths, MSTs [slides] [solution]	Exam Review	
	Wed 04/03	21.1, 21.2, 21.3, 21.4	27. Reductions and Decomposition [video] [slides] [guide]	DFS, BFS, Shortest Paths, MSTs Exam Prep [solution]		
	Fri 04/05	None	28. No Lecture			Midterm 2 (Date 4/5, Time 8-10PM) Material up to 4/1

Week	Date	Reading	Lecture	Discussion	Lab	Assignments/Exams
11 survey	Mon 04/08	Algs 244-275, 323-327	29. Basic Sorts [video] [slides] [guide]	Graphs [slides] [solution] Graphs Exam Prep [solution]	Merge and Quicksort (due 4/12) Challenge Bears and Beds (due 4/12)	HW 4: Puzzle Solver (due 4/10)
	Wed 04/10	Algs 288-296, 302	30. Quick Sort [video] [slides] [guide]			
	Fri 04/12	None	31. Software Engineering I [video] [slides] [guide]			Proj 2C: Bear Maps (due 4/17)
12 survey	Mon 04/15	Algs 341-347	32. More Quick Sort, Sorting Summary [video] [slides] [guide]	Sorting, ADTs [slides] [solution] Sorting Exam Prep [solution]	Getting Started on Project 3 (due 4/19)	
	Wed 04/17	Algs 279-282	33. Sorting and Algorithmic Bounds [video] [slides] [guide]			
	Fri 04/19	None	34. Software Engineering II [video] [slides] [guide]			Proj 3A: BYOW Phase 1(due 4/26)
13 survey	Mon 04/22	Algs 702-718	35. Radix Sorts [video] [slides] [guide]	More Sorting [slides] [solution] Sorting Exam Prep [solution]	Interactivity in Project 3	
	Wed 04/24	None	36. Sorting and Data Structures Conclusion [video] [slides] [guide]			
	Fri 04/26	None	37. Software Engineering III [video] [slides] [guide]			
14 survey	Mon 04/29	None	38. Compression [video] [slides] [guide]	Goodbye, Fun	BYOW Demos	Proj 3B: BYOW Phase 2 (due on 5/01)

Week	Date	Reading	Lecture	Discussion	Lab	Assignments/Exams
	Wed 05/01	None	39. Compression, Complexity, and P=NP? [video] [slides] [guide]			
	Fri 05/03	None	40. Summary, Fun [slides]			
15	RRR Week (May 6-10)					
Finals Week (May 13-17), Final exam: TBD						

Lab/Discussion Schedule

Each discussion section is now a **regular**, an **exam-prep**, or a **LOST** discussion section.

1. Regular discussions will focus on reviewing the material and doing foundational questions.
2. Exam-prep discussions will have less review of concepts and focus on working through exam-level problems.
3. LOST sections will be special drop-in sections that assume no prior knowledge and will be a safe space for students who are feeling behind.

Each lab section is now either a **regular** or a **challenge** lab section.

1. Regular lab sections will follow closely with course material and applying what you learn in lecture.
2. Challenge lab sections will focus on interesting collaborative puzzle solving programming challenges that are meant to prepare students for trickier exam problems.

Jan 20 – 26, 2019

today < >

	Sun 1/20	Mon 1/21	Tue 1/22	Wed 1/23	Thu 1/24	Fri 1/25

	Sun 1/20	Mon 1/21	Tue 1/22	Wed 1/23	Thu 1/24	Fri 1/25
9am			9:00 - 10:00 DISC: 112, 118	9:00 - 10:00 DISC: 135, 136, 137, 138, 141	9:00 - 11:00 LAB: 111, 113, 114, 115	9:00 - 11:00 LAB: 135, 136, 137, 138, 139
10am			10:00 - 11:00 DISC: 113, 115, 117	10:00 - 11:00 DISC: 139		
11am			11:00 - 12:00 DISC: 116	11:00 - 12:00 DISC: 140	11:00 - 1:00 LAB: 116, 117, 118, 119, 120	11:00 - 1:00 LAB: 140, 141, 142, 143, 144
12pm				12:00 - 1:00 DISC: 142, 143, 144		
1pm			1:00 - 2:00 DISC: 122, 134	1:00 - 2:00 DISC: 146	1:00 - 3:00 LAB: 121, 122, 123, 124, 125	1:00 - 3:00 LAB: 145, 146, 147, 148, 149
2pm			2:00 - 3:00 DISC: 123, 124, 125, 145	2:00 - 3:00 DISC: 147, 148, 149		
3pm			3:00 - 4:00 DISC: 126, 127, 128		3:00 - 5:00 LAB: 126, 127, 128, 129, 130	
4pm			4:00 - 5:00 DISC: 129, 130	4:00 - 6:00 LAB: 151, 152, 153, 154		
5pm			5:00 - 6:00 DISC: 119, 120, 121, 131, 132,		5:00 - 7:00 LAB: 131, 132, 133, 134	
6pm						
7pm						
8pm						

Google Calendar iCal

Office Hour Schedule

Note: Office hours before lecture on Monday, Wednesday and Friday are in 109 Morgan. Office hours before 2 P.M. on Tuesday are in 310 Jacobs. Office hours after 5 P.M. on Tuesday and Wednesday are in 400 Cory. On Wednesday, Thursday, and Friday, feel free to come to lab with your questions.

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today < >

	Sun 1/20	Mon 1/21	Tue 1/22	Wed 1/23	Thu 1/24	Fri 1/25	Sat 1/26

	Sun 1/20	Mon 1/21	Tue 1/22	Wed 1/23	Thu 1/24	Fri 1/25	Sat 1/26
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